REMARKS

[0002]   Applicant respectfully requests reconsideration and allowance of all of the claims of the application. The status of the claims is as follows:

- Claims 1, 4-6, 9, 13, 14 and 16-18 are currently pending

- Claim 18 is amended herein

- No new matter is added herein

Regarding Response to Applicant's Remarks/Amendments

[0003]   On p. 2 of the Action and under the heading of "Response to Applicant's Remarks/Amendments," the Office states the following:

> 5.   Applicant's remarks filed on May 13, 2009 have been fully considered, but are not persuasive. Here Applicant's newly added language is directed to a "hashing function." As the Applicant has not asserted that they are the inventors of this particular "hashing function" then a predictable result would have been to substitute one hashing function for another hashing function.[1] Therefore, the Examiner respectfully disagrees with the Applicant and maintains his rejection.

[0004]   Applicant notes and respectfully disagrees with the Office's assertion: "As the Applicant has not asserted that they are the inventors of this particular 'hashing function' then a predictable result would have been to substitute one hashing function for another hashing function." With regard to "this particular 'hashing function,'" Applicant presumes that the Office is referring to the following (from claim 1, for example):

> a hashing function having a quotient of two weighted, linear, statistical combinations and wherein the rational statistics are semi-global characteristics, wherein numerator of the quotient is a first of the two

weighted, linear, statistical combinations and wherein denominator of the quotient is a second of the two weighted, linear, statistical combinations

[0005] Applicant has never expressly said nor implied that it was not the inventors of a claimed hashing function. Furthermore, Applicant respectfully submits that inclusion of language in a claim implies that such language covers that which the Applicant views as part of its invention.

[0006] So, Applicant respectfully requests that the Office indentify, with particularity, sufficient objective evidence supporting its assertion. Also, Applicant requests that the Office identify the specific statutes, law, rules, or procedures that, when combined with the objective evidence, supports its conclusion. Without the necessary citation of sufficient objective evidence and law/rules, Applicant submits that the Office must withdraw this assertion.

Cited Document

[0007] **Venkatesan**: Venkatesan et al., U.S. Patent Application Publication No. 2004/0001605 has been applied to reject one or more claims of the Application.

Claims 1, 4-6, 9, 13, 14 and 16-18 Are Non-Obvious Over Venkatesan

[0008] Claims 1, 4-6, 9, 13, 14 and 16-18 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Venkatesan. Applicant respectfully traverses the rejection.

Independent Claim *1*

[0009]   Applicant submits that the Office has not made a prima facie showing that independent claim 1 is obvious in view of Venkatesan.   Applicant submits that Venkatesan does not teach or suggest the following features of this claim (with emphasis added):

> calculating rational statistics of one or more the regions of the plurality, so that the statistics of a region are representative of the region, wherein the calculating comprises generating the rational statistics of one or more regions of the plurality via **a hashing function having a quotient of two weighted, linear, statistical combinations and wherein the rational statistics are semi-global characteristics, wherein numerator of the quotient is a first of the two weighted, linear, statistical combinations and wherein denominator of the quotient is a second of the two weighted, linear, statistical combinations;**

[0010]   The Office does not cite any reference as teaching this claimed "rational statistics" hashing function feature, which is quoted above. (Office Action, pages *3-4*.)

[0011]   In short, the Office has never found this claimed "rational statistics" hashing function feature in any of the art of record and consequently has never identified any reference as disclosing, teaching or suggesting that claimed feature. Applicant noted this in its response to the previous Office Action (dated 2/13/2009).

[0012]   The Office admits that Venkatesan (its only references for its obviousness rejection) fails to teach a key portion of the claimed "rational statistics" hashing function feature. That admission (from p. 4 of the Action) is shown here:

Vankatesan does not expressly teach:

> wherein numerator of the quotient is a first of the two weighted, linear, statistical combinations and wherein denominator of the quotient is a second of the two weighted, linear, statistical combinations;

[0013]   However, in this Action, instead of finding the claimed "rational statistics" hashing function feature in any reference, the Office has taken the unusual step of asserting that Applicant has "not asserted that they are the inventors of this particular 'hashing function,'" which Application presumes is the hashing function described by the very claimed "rational statistics" hashing function feature that the Office has of yet been unable to find in any reference. (See p. 2, paragraph 5 of the Action for the Office's assertion and is reproduced herein in paragraph [0003] above.) From this assertion, the Office concludes that the Office does not need to find the claimed "rational statistics" hashing function feature because any hashing function can be substituted for any other hashing function. (See p. 2, paragraph 5 of the Action.)

[0014]   As noted above, Applicant has never expressly said nor implied that it was not the inventors of a claimed hashing function. Furthermore, Applicant respectfully submits that inclusion of language in a claim implies that such language covers that which the Applicant views as part of its invention.

[0015]   Furthermore, Applicant notes that the Office failed to identify sufficient objective evidence supporting its assertion. Also, the Office has failed to identify the specific statute, law, rule, or procedure that, when combined with the objective evidence, supports its conclusion.

[0016]   So, after acknowledging that no cited reference teaches a key portion of the claimed "rational statistics" hashing function feature and after making its assertion, the Office offers the following in an effort to complete its requirements for a prima facie obviousness rejection of this claim (on p. 7):

However, *Vankatesan* expressly teaches:

> [0061] Examples of such pseudo-random statistics may be linear statistics. These linear statistics of a (pseudo-randomly) chosen region are given by weighted linear combination of data in that region (where weights are chosen pseudo-randomly).
>
> [0099] A suitable statistic for such calculation is the mean (e.g., average) of the values of the individual coefficients in each region (averages correspond to special case of choosing the vectors [.alpha..sub.1] s.t. they are uniform in regions [R.sub.1] and zero everywhere else). Other suitable statistics and their robustness are discussed in Venkatesan, Koon, Jakubowski, and Moulin, **"Robust image hashing,"** Proc. IEEE ICIP 2000, Vancouver, Canada, September 2000 for images and in Mihcak and Venkatesan, "A Tool for Robust Audio Information Hiding: A Perceptual Audio Hashing Algorithm", IHW 2001, Pittsburgh Pa. for audio signals. In this document, no information embedding was considered, but similar statistics were discussed.

"Robust Image Hashing" was disclosed in *Vankatesan*, and a predictable result would have been to substitute one hashing function for another hashing function.[2]

The Court recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.[3]

[0017]   So, instead of finding a claimed feature in the art, the Office asserts that the feature is not part of the invention, is already known, and is therefore obvious. Application respectfully disagrees with both the Office's conclusion and its approach.

[0018]   Applicant respectfully submits that the Office has failed to make its prima facie case for obviousness under §103.

1. The Office did not identify objective evidence that each and every element in this claim was found, taught or suggested in the prior art.

2. The Office also failed to give a reason why one of ordinary skill in the art at the time of the invention would combine teachings in the prior art to form the combination found in this claim.

3. The Office failed to provide objective evidence supporting that reasoning.

4. The Office's assertion (see p. 2, paragraph 5 of the Action for the Office's assertion and is reproduced herein in paragraph [0003] above) was groundless, lacked objective evidence, and lacked a solid legal foundation (e.g., a statute, law, rule, or procedure).

5. Furthermore, the Office failed to follow its own procedures (e.g., MPEP 2142.B).

[0019]   As the Office knows, "the examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness." MPEP 2142. This requirement has been explained by the Supreme Court in *KSR v. Teleflex*, 550 U.S.398; 127 S. Ct. 1727 (2007) which noted that such a rejection requires "some articulated reasoning ... to support the legal conclusion of obviousness." As stated by the Court, obviousness can be established where "there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit." (emphasis added) *See In re Kahn*, 441 F. 3d 977, 988 (CA Fed. 2006) ('[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.')." *KSR v. Teleflex*, 550 U.S. 398; 127 S. Ct. 1727 at 1741.

[0020]   The MPEP states as follows: "the examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a prima facie case of unpatentability. If that burden is met, the burden of coming forward with evidence or argument shifts to the applicant. . . If examination at the initial stage does not produce a prima facie case of unpatentability, then without more the Applicant is entitled to grant of the patent." MPEP § 2107 (citing In re *Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d

1443, 1444 (Fed. Cir. 1992)); *In Re Glaug*, 283 F.3d 1335, 62 USPQ2d 1151 (Fed. Cir. 2002) ("During patent examination the PTO bears the initial burden of presenting a prima facie case of unpatentability. *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984). If the USPTO fails to meet this burden, then the Applicant are entitled to the patent. Accordingly, unless and until an USPTO presents evidence establishing prima facie unpatentability, an Applicant is entitled to a patent on all Claims presented for examination.

[0021]   For example, in making an obviousness rejection, the evidence required must come in the form of particular findings: "[b]road conclusory statements standing alone are not 'evidence'." *In re Kotzab*, 217 F.3d 1365, 1370 (Fed. Cir. 2000) (citing In re Dembiczak, 175 F.3d 994, 999 (Fed. Cir. 1999)). The Supreme Court has affirmed this requirement in its *KSR v. Teleflex* decision: "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR v. Teleflex*, 550 U.S. 398; 127 S. Ct. 1727 at 1741 (citing *In re Kahn*, 441 F. 3d 977, 988 (Fed. Cir. 2006)).

[0022]   The court in Kotzab held that "more than a mere scintilla of evidence is necessary" to support the USPTO's prima facie case. *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000). This underscores the requirement for some evidence in making a prima facie case; rejections based on no evidence have repeatedly been reversed by the Federal Circuit. See *In re McNeil-PPC*, 2008-1546, slip op. 1, 10 (Fed. Cir. July 31, 2009) (anticipation rejection reversed where findings by the BPAI about the disclosures

of a prior art patent application are not supported by substantial evidence), *In re Kotzab*,

217 F.3d 1365, 1371 (Fed. Cir. 2000) (obviousness rejection reversed where there was

no finding as to the specific understanding or principle needed to support USPTO's

prima facie case), and *In re Robert Skvorecz*, 2008-1221, slip op. 1, 7 (Fed. Cir.

September 3, 2009) (anticipation rejection reversed where USPTO's assertion that

reference contained identical recitations as the claim was unsupported by any

evidence).

[0023]   Because of the footnotes (esp. footnote 1, 2, 4, and 6) and their references of

Ex parte Smith, 83 USPQ2d 1509 (Bd. Pat. App. & Int. 2007), it appears that the Office

is relying upon MPEP 2143. More particularly, section B and example 4 of MPEP 2143,

which are reproduced here:

> **B.   Simple Substitution of One Known Element for Another to Obtain Predictable Results**
>
> To reject a claim based on this rationale, Office personnel must resolve the *Graham* factual inquiries. Then, Office personnel must articulate the following:
>
> (1) a finding that the prior art contained a device (method, product, etc.) which differed from the claimed device by the substitution of some components (step, element, etc.) with other components;
>
> (2) a finding that the substituted components and their functions were known in the art;
>
> (3) a finding that one of ordinary skill in the art could have substituted one known element for another, and the results of the substitution would have been predictable; and
>
> (4) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness.
>
> The rationale to support a conclusion that the claim would have been obvious is that the substitution of one known element for another yields predictable results to one of ordinary skill in the art. If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art.
>
> …

Example 4:

The claimed invention in *Ex parte Smith*, 83 USPQ2d 1509 (Bd. Pat. App. & Int. 2007), was a pocket insert for a bound book made by gluing a base sheet and a pocket sheet of paper together to form a continuous two-ply seam defining a closed pocket. The prior art (Wyant) disclosed at least one pocket formed by folding a single sheet and securing the folder portions along the inside margins using any convenient bonding method. The prior art (Wyant) did not disclose bonding the sheets to form a continuous two-ply seam. The prior art (Dick) disclosed a pocket that is made by stitching or otherwise securing two sheets along three of its four edges to define a closed pocket with an opening along its fourth edge.

In considering the teachings of Wyant and Dick, the Board "found that (1) each of the claimed elements is found within the scope and content of the prior art; (2) one of ordinary skill in the art could have combined the elements as claimed by methods known at the time the invention was made; and (3) one of ordinary skill in the art would have recognized at the time the invention was made that the capabilities or functions of the combination were predictable." Citing *KSR*, the Board concluded that "[t]he substitution of the continuous, two-ply seam of Dick for the folded seam of Wyant thus is no more than the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for improvement.

[0024] Applicant submits that the Office has not followed MPEP 2143.B. It requires that Office personnel "must articulate" four things and all four of these things:

"(1) a finding that the prior art contained a device (method, product, etc.) which differed from the claimed device by the substitution of some components (step, element, etc.) with other components;

(2) a finding that the substituted components and their functions were known in the art;

(3) a finding that one of ordinary skill in the art could have substituted one known element for another, and the results of the substitution would have been predictable; and

(4) whatever additional findings based on the Graham factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness."

[0025]   Applicant submits, in this Action, the Office failed to do any of these four required things for MPEP 2143.B. All four are required and the Office did none. MPEP 2143.B itself says the following to make it abundantly clear how important it is that the Office articulate all four of these requirements: "If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art."

[0026]   Consequently, the Office filed to make a prima facie case and follow its own procedures and rules. Furthermore, Venkatesan does not teach or suggest all of the elements and features of this claim. Accordingly, Applicant respectfully requests that the rejection of this claim be withdrawn.

Dependent Claims 4-6

[0027]   Claims 4-6 ultimately depend from independent claim 1. As discussed above, claim 1 is patentable over the cited documents. Therefore, claims 4-6 are also patentable over the cited documents of record for at least their dependency from a patentable base claim. These claims may also be patentable for the additional features that each recites.

Independent Claim 9

[0028]   Applicant submits that the Office has not made a prima facie showing that independent claim 9 is obvious in view of Venkatesan. Applicant submits that

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Atty Docket No.: MS1-1811US
Atty/Agent: Kasey C. Christie
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Venkatesan does not teach or suggest the following features of this claim (with emphasis added):

> using quantization, marking the digital good with a watermark, wherein such quantization is based upon semi-global characteristics of regions of the digital good, wherein such semi-global characteristics are generated via **a hashing function employing a quotient of at least two weighted linear combinations of statistics of the regions of the digital good, wherein numerator of the quotient is a first of the two weighted, linear, statistical combinations and wherein the denominator of the quotient is a second of the two weighted, linear, statistical combinations;**

[0029]   The Office does not cite any reference as teaching this claimed "rational statistics" hashing function feature, which is quoted above. (Office Action, pages *3-4*.)

[0030]   In short, the Office has never found this claimed "rational statistics" hashing function feature in any of the art of record and consequently has never identified any reference as disclosing, teaching or suggesting that claimed feature. Applicant noted this in its response to the previous Office Action (dated 2/13/2009).

[0031]   The Office admits that Venkatesan (its only references for its obviousness rejection) fails to teach a key portion of the claimed "rational statistics" hashing function feature. That admission (from p. 7 of the Action) is shown here:

Vankatesan does not expressly teach:

> wherein numerator of the quotient is a first of the two weighted, linear, statistical combinations and wherein denominator of the quotient is a second of the two weighted, linear, statistical combinations;

[0032]   However, in this Action, instead of finding the claimed "rational statistics" hashing function feature in any reference, the Office has taken the unusual step of asserting that Applicant has "not asserted that they are the inventors of this particular

'hashing function,'" which Application presumes is the hashing function described by the very claimed "rational statistics" hashing function feature that the Office has of yet been unable to find in any reference. (See p. 2, paragraph 5 of the Action for the Office's assertion and is reproduced herein in paragraph [0003] above.) From this assertion, the Office concludes that the Office does not need to find the claimed "rational statistics" hashing function feature because any hashing function can be substituted for any other hashing function. (See p. 2, paragraph 5 of the Action.)

[0033] As noted above, Applicant has never expressly said nor implied that it was not the inventors of a claimed hashing function. Furthermore, Applicant respectfully submits that inclusion of language in a claim implies that such language covers that which the Applicant views as part of its invention.

[0034] Furthermore, Applicant notes that the Office failed to identify any objective evidence supporting its assertion. Also, the Office has failed to identify the specific statute, law, rule, or procedure that, when combined with the objective evidence, supports its conclusion.

[0035] So, after acknowledging that no cited reference teaches a key portion of the claimed "rational statistics" hashing function feature and after making its assertion, the Office offers the following in an effort to complete its requirements for a prima facie obviousness rejection of this claim (on p. 7):

However, *Vankatesan* expressly teaches:

> [0061] Examples of such pseudo-random statistics may be linear statistics. These linear statistics of a (pseudo-randomly) chosen region are given by weighted linear combination of data in that region (where weights are chosen pseudo-randomly).
>
> [0099] A suitable statistic for such calculation is the mean (e.g., average) of the values of the individual coefficients in each region (averages correspond to special case of choosing the vectors [.alpha..sub.l] s.t. they are uniform in regions [R.sub.l] and zero everywhere else). Other suitable statistics and their robustness are discussed in Venkatesan, Koon, Jakubowski, and Moulin, **"Robust image hashing,"** Proc. IEEE ICIP 2000, Vancouver, Canada, September 2000 for images and in Mihcak and Venkatesan, "A Tool for Robust Audio Information Hiding: A Perceptual Audio Hashing Algorithm", IHW 2001, Pittsburgh Pa. for audio signals. In this document, no information embedding was considered, but similar statistics were discussed.

"Robust Image Hashing" was disclosed in *Vankatesan*, and a predictable result would have been to substitute one hashing function for another hashing function.[4] The Court recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.[5]

[0036] So, instead of finding a claimed feature in the art, the Office asserts that the feature is not part of the invention, is already known, and is therefore obvious. Application respectfully disagrees with both the Office's conclusion and its approach.

[0037] Applicant respectfully submits that the Office has failed to make its prima facie case for obviousness under §103.

1. The Office did not identify objective evidence that each and every element in this claim was found, taught or suggested in the prior art.

2. The Office also failed to give a reason why one of ordinary skill in the art at the time of the invention would combine teachings in the prior art to form the combination found in this claim.

3. The Office failed to provide objective evidence supporting that reasoning.

4. The Office's assertion (see p. 2, paragraph 5 of the Action for the Office's assertion and is reproduced herein in paragraph [0003] above) was groundless, lacked objective evidence, and lacked a solid legal foundation (e.g., a statute, law, rule, or procedure).

5. Furthermore, the Office failed to follow its own procedures (e.g., MPEP 2142.B).

[0038]   Further discussion about this is found about in the response to the rejection of claim 1, especially in paragraphs [0019] – [0025]. The points made during that discussion apply here as well.

[0039]   Consequently, the Office filed to make a prima facie case and follow its own procedures and rules. Furthermore, Venkatesan does not teach or suggest all of the elements and features of this claim. Accordingly, Applicant respectfully requests that the rejection of this claim be withdrawn.

Independent Claim 13

[0040]   Applicant submits that the Office has not made a prima facie showing that independent claim 13 is obvious in view of Venkatesan. Applicant submits that Venkatesan does not teach or suggest the following features of this claim (with emphasis added):

> a region-statistics calculator configured to calculate rational statistics of one or more of the plurality of regions, wherein the statistics of a region are representative of that region, wherein the region-statistics calculator is further configured to generate the rational statistics of one or more regions of the plurality via **a hashing function having a quotient of two weighted, linear, statistical combinations and wherein the rational statistics are semi-global characteristics, wherein numerator of the quotient is a first of the two**

weighted, linear, statistical combinations and wherein and the denominator of the quotient is a second of the two weighted, linear, statistical combinations;

[0041]   The Office does not cite any reference as teaching this claimed "rational statistics" hashing function feature, which is quoted above. (Office Action, pages *3-4*.)

[0042]   In short, the Office has never found this claimed "rational statistics" hashing function feature in any of the art of record and consequently has never identified any reference as disclosing, teaching or suggesting that claimed feature. Applicant noted this in its response to the previous Office Action (dated 2/13/2009).

[0043]   The Office admits that Venkatesan (its only references for its obviousness rejection) fails to teach a key portion of the claimed "rational statistics" hashing function feature. That admission (from p. 8 of the Action) is shown here:

Vankatesan does not expressly teach:

wherein numerator of the quotient is a first of the two weighted, linear, statistical combinations and wherein denominator of the quotient is a second of the two weighted, linear, statistical combinations;

[0044]   However, in this Action, instead of finding the claimed "rational statistics" hashing function feature in any reference, the Office has taken the unusual step of asserting that Applicant has "not asserted that they are the inventors of this particular 'hashing function,'" which Application presumes is the hashing function described by the very claimed "rational statistics" hashing function feature that the Office has of yet been unable to find in any reference. (See p. 2, paragraph 5 of the Action for the Office's assertion and is reproduced herein in paragraph [0003] above.) From this assertion, the Office concludes that the Office does not need to find the claimed "rational statistics"

hashing function feature because any hashing function can be substituted for any other hashing function. (See p. 2, paragraph 5 of the Action.)

[0045]   As noted above, Applicant has never expressly said nor implied that it was not the inventors of a claimed hashing function. Furthermore, Applicant respectfully submits that inclusion of language in a claim implies that such language covers that which the Applicant views as part of its invention.

[0046]   Furthermore, Applicant notes that the Office failed to identify any objective evidence supporting its assertion. Also, the Office has failed to identify the specific statute, law, rule, or procedure that, when combined with the objective evidence, supports its conclusion.

[0047]   So, after acknowledging that no cited reference teaches a key portion of the claimed "rational statistics" hashing function feature and after making its assertion, the Office offers the following in an effort to complete its requirements for a prima facie obviousness rejection of this claim (on pp. 8-9):

However, *Vankatesan* expressly teaches:

> [0061] Examples of such pseudo-random statistics may be linear statistics. These linear statistics of a (pseudo-randomly) chosen region are given by weighted linear combination of data in that region (where weights are chosen pseudo-randomly).
>
> [0099] A suitable statistic for such calculation is the mean (e.g., average) of the values of the individual coefficients in each region (averages correspond to special case of choosing the vectors [.alpha..sub.l] s.t. they are uniform in regions [R.sub.l] and zero everywhere else). Other suitable statistics and their robustness are discussed in Venkatesan, Koon, Jakubowski, and Moulin, **"Robust image hashing,"** Proc. IEEE ICIP 2000, Vancouver, Canada, September 2000 for images and in Mihcak and Venkatesan, "A Tool for Robust Audio Information Hiding: A Perceptual Audio Hashing Algorithm", IHW 2001, Pittsburgh Pa. for audio signals. In this document, no information embedding was considered, but similar statistics were discussed.

"Robust Image Hashing" was disclosed in *Vankatesan*, and a predictable result would have been to substitute one hashing function for another hashing function.[4] The Court recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.[5]

[0048] So, instead of finding a claimed feature in the art, the Office asserts that the feature is not part of the invention, is already known, and is therefore obvious. Application respectfully disagrees with both the Office's conclusion and its approach.

[0049] Applicant respectfully submits that the Office has failed to make its prima facie case for obviousness under §103.

1. The Office did not identify objective evidence that each and every element in this claim was found, taught or suggested in the prior art.

2. The Office also failed to give a reason why one of ordinary skill in the art at the time of the invention would combine teachings in the prior art to form the combination found in this claim.

3. The Office failed to provide objective evidence supporting that reasoning.

4. The Office's assertion (see p. 2, paragraph 5 of the Action for the Office's assertion and is reproduced herein in paragraph [0003] above) was groundless, lacked objective evidence, and lacked a solid legal foundation (e.g., a statute, law, rule, or procedure).

5. Furthermore, the Office failed to follow its own procedures (e.g., MPEP 2142.B).

[0050]   Further discussion about this is found about in the response to the rejection of claim 1, especially in paragraphs [0019] – [0025]. The points made during that discussion apply here as well.

[0051]   Consequently, the Office filed to make a prima facie case and follow its own procedures and rules. Furthermore, Venkatesan does not teach or suggest all of the elements and features of this claim. Accordingly, Applicant respectfully requests that the rejection of this claim be withdrawn.

Dependent Claims 14, 16, and 17

[0052]   Claims *14, 16, and 17* ultimately depend from independent claim *13*. As discussed above, claim 13 is patentable over the cited documents. Therefore, claims *14, 16, and 17* are also patentable over the cited documents of record for at least their dependency from a patentable base claim. These claims may also be patentable for the additional features that each recites.

Independent Claim 18

[0053]   Applicant submits that the Office has not made a prima facie showing that independent claim 18 is obvious in view of Venkatesan. Applicant submits that

Venkatesan does not teach or suggest the following features of this claim, as amended (with emphasis added):

> calculating rational statistics of one or more the regions of the plurality, so that the statistics of a region are representative of the region, wherein the rational statistics are semi-global characteristics_and **stay approximately invariant under any local magnitude-scaling of the digital good;**
>
> quantizing the rational statistics;
>
> marking the digital good with the quantized rational statistics of the plurality of the regions, wherein the marking comprises embedding a watermark via quantization,
>
> ~~wherein~~ the calculating ~~comprises~~ comprising:
>
> **generating pseudo-random weight factors, *a* and *b*;**
>
> generating the rational statistics of one or more regions of the plurality via **a hashing function, *h*, that hashing function having quotient of two weighted, linear, statistical combinations, and where**

$$h_i = \frac{\sum_{j \in R_i} \alpha_{ij} s_j}{\sum_{j \in R_i} b_{ij} s_j}$$

> **where:**
>
> - α_{ij} **is the jth element of α_i and α_i are a pseudo-random generated weight factors;**
>
> - b_{ij} **is the jth element of b_i and b_i are a pseudo-random generated weight factors;**
>
> **s denotes the digital good of dimension N × 1;**
>
> - **R_i are the plurality of regions, where $R_i \subseteq \{1,2,...,N\}$.**

[0054]   The Office does not cite any reference as teaching this claimed "rational statistics" hashing function feature, which is quoted above. (Office Action, pages **3-4**.)

[0055]   The Office does not cite any reference as teaching this claimed "rational statistics" hashing function feature, which is quoted above. (Office Action, pages **3-4**.)

[0056]   In short, the Office has never found this claimed "rational statistics" hashing function feature in any of the art of record and consequently has never identified any reference as disclosing, teaching or suggesting that claimed feature. Applicant noted this in its response to the previous Office Action (dated 2/13/2009).

[0057]   The Office admits that Venkatesan (its only references for its obviousness rejection) fails to teach a key portion of the claimed "rational statistics" hashing function feature. That admission (from p. 10 of the Action) is shown here:

Vankatesan does not expressly teach:

> wherein numerator of the quotient is a first of the two weighted, linear, statistical combinations and wherein denominator of the quotient is a second of the two weighted, linear, statistical combinations;

[0058]   However, in this Action, instead of finding the claimed "rational statistics" hashing function feature in any reference, the Office has taken the unusual step of asserting that Applicant has "not asserted that they are the inventors of this particular 'hashing function,'" which Application presumes is the hashing function described by the very claimed "rational statistics" hashing function feature that the Office has of yet been unable to find in any reference. (See p. 2, paragraph 5 of the Action for the Office's assertion and is reproduced herein in paragraph [0003] above.) From this assertion, the Office concludes that the Office does not need to find the claimed "rational statistics" hashing function feature because any hashing function can be substituted for any other hashing function. (See p. 2, paragraph 5 of the Action.)

[0059]   As noted above, Applicant has never expressly said nor implied that it was not the inventors of a claimed hashing function. Furthermore, Applicant respectfully submits

that inclusion of language in a claim implies that such language covers that which the Applicant views as part of its invention.

[0060] Furthermore, Applicant notes that the Office failed to identify any objective evidence supporting its assertion. Also, the Office has failed to identify the specific statute, law, rule, or procedure that, when combined with the objective evidence, supports its conclusion.

[0061] So, after acknowledging that no cited reference teaches a key portion of the claimed "rational statistics" hashing function feature and after making its assertion, the Office offers the following in an effort to complete its requirements for a prima facie obviousness rejection of this claim (on p. 10-11):

However, *Vankatesan* expressly teaches:

> [0061] Examples of such pseudo-random statistics may be linear statistics. These linear statistics of a (pseudo-randomly) chosen region are given by weighted linear combination of data in that region (where weights are chosen pseudo-randomly).

> [0099] A suitable statistic for such calculation is the mean (e.g., average) of the values of the individual coefficients in each region (averages correspond to special case of choosing the vectors [.alpha..sub.1] s.t. they are uniform in regions [R.sub.1] and zero everywhere else). Other suitable statistics and their robustness are discussed in Venkatesan, Koon, Jakubowski, and Moulin, **"Robust image hashing,"** Proc. IEEE ICIP 2000, Vancouver, Canada, September 2000 for images and in Mihcak and Venkatesan, "A Tool for Robust Audio Information Hiding: A Perceptual Audio Hashing Algorithm", IHW 2001, Pittsburgh Pa. for audio signals. In this document, no information embedding was considered, but similar statistics were discussed.

"Robust Image Hashing" was disclosed in *Vankatesan*, and a predictable result would have been to substitute one hashing function for another hashing function.[4]
The Court recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.[5]

[0062]   So, instead of finding a claimed feature in the art, the Office asserts that the feature is not part of the invention, is already known, and is therefore obvious. Application respectfully disagrees with both the Office's conclusion and its approach.

[0063]   Applicant respectfully submits that the Office has failed to make its prima facie case for obviousness under §103.

1. The Office did not identify objective evidence that each and every element in this claim was found, taught or suggested in the prior art.

2. The Office also failed to give a reason why one of ordinary skill in the art at the time of the invention would combine teachings in the prior art to form the combination found in this claim.

3. The Office failed to provide objective evidence supporting that reasoning.

4. The Office's assertion (see p. 2, paragraph 5 of the Action for the Office's assertion and is reproduced herein in paragraph [0003] above) was groundless, lacked objective evidence, and lacked a solid legal foundation (e.g., a statute, law, rule, or procedure).

5. Furthermore, the Office failed to follow its own procedures (e.g., MPEP 2142.B).

[0064]   Further discussion about this is found about in the response to the rejection of claim 1, especially in paragraphs [0019] – [0025]. The points made during that discussion apply here as well.

[0065]   In addition, this claim is amended herein to add these features: "the rational statistics [staying] approximately invariant under any local magnitude-scaling of the digital good" and the calculating comprising "generating pseudo-random weight factors, a and b."

[0066] These things are not found in the cited art of record. Therefore, this claim is allowable for inclusion of these new claim features, at the very least.

[0067] Consequently, the Office filed to make a prima facie case and follow its own procedures and rules. Furthermore, Venkatesan does not teach or suggest all of the elements and features of this claim. Accordingly, Applicant respectfully requests that the rejection of this claim be withdrawn.

Conclusion

[0068] Applicant submits that all pending claims are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the application. If any issues remain that prevent issuance of this application, the Examiner is urged to contact the undersigned representative for the Applicant before issuing a subsequent Action.

Respectfully Submitted,

Lee & Hayes, PLLC
Representative for Applicant

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